

REMARKS

The Applicants respectfully request that the Examiner consider the reasons outlined herein, and allow the claims currently pending in this application.

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Rejections – 35 USC 103

On page 2 of the Office Action, the Examiner rejected Claims 1-4, 6-12, 14-20, and 22-24 under 35 U.S.C. 103 as being unpatentable over US Patent No. 6,344,165 to Starodubov, herein referred to as “the Starodubov patent,” in view of US Patent No. 6,272,165 to Stepanov, herein referred to as “the Stepanov patent,” US Patent No. 5,327,515 to Anderson et al., herein referred to as “the Anderson patent,” US Patent No. 6,072,811 to Fermann et al., herein referred to as “the Fermann patent,” and US Patent No. 5,511,083 to D’Amato, herein referred to as the D’Amato patent.

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15 Swearing Behind the Prior Art

“Applicant may overcome a 35 U.S.C. 103 rejection based on a combination of references by showing completion of the invention by applicant prior to the effective date of any of the references; applicant need not antedate the reference with the earliest filing date... applicant’s 37 CFR 1.131 affidavit [declaration] must show possession of either the whole invention as claimed or something falling within the claim(s) prior to the effective date of the reference being antedated,” MPEP §715.02

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The Applicants respectfully note that the effective date of Starodubov et al. is August 26, 1999. The Applicants have submitted, herewith, a Declaration under 35 CFR 1.131 by the Applicant. The Declaration, along with its accompanying appendix demonstrates that this invention was conceived at least as early as October 7, 1998, and that diligent steps were taken inside the United States of America until the present application was filed on August 7, 2001. In addition, an Invention Disclosure signed on October 7, 1998 is presented.

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The Declaration under 37 CFR 1.131, along with the other evidence submitted herewith is sufficient to “swear behind” the effective dates of the Starodubov et al. patent. The Applicants wish to note that the Starodubov et al. patent is a common thread among

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all of the rejections under 35 USC 103(a), and that by antedating the Starodubov et al. patent, the Applicants have satisfied the Examiner's concerns regarding all pending art-based rejections under 103(a). Should the Examiner need any further information or evidence, the Applicants encourage the Examiner to contact the Applicants at the
5 Examiner's earliest convenience.

In view of the effective date established by the Declarations under 37 CFR 1.131 that are included herewith, the remaining effective prior art of record, taken individually, or in the aggregate, does not appear to contemplate all the limitations of any claim of the present invention.

10 For at least the foregoing reasons the Applicants respectfully request that the existing claim rejections under 35 USC §103 be withdrawn.

Claims 1 and 9

The Applicants submit that even if the Starodubov patent is considered prior art,
15 the claims currently pending in the application are patentable over the art cited thus far by the Examiner.

On page 3 of the office Action, the Examiner specifically rejected Claims 1 and 9 by stating that Figure 3 and column 4 of the Starodubov patent illustrates a mask being irradiated by an argon laser source for forming a Bragg grating within an optical fiber
20 that has been coiled into a spiral. The Examiner combined the Starodubov patent with the Stepanov patent stating that Figure 1, the abstract and column 3 of the Stepanov patent illustrates a ring rare earth doped fiber laser having a grating within the fiber laser. Further, the Examiner turned to column 5, lines 48-64 of the D'Amato patent as disclosing that it is well known to suppress adjacent longitudinal modes by use of
25 gratings and that the degree of differential loss required to suppress one polarization state is substantially less than that required to suppress adjacent longitudinal modes. The Examiner concluded that any person having ordinary skill in the art would understand through the teachings found in the D'Amato patent that obtaining a signal longitudinal mode operation of the fiber laser will also obtain a single polarization output. Further,
30 the Examiner concluded that it would have been obvious to a person having ordinary skill in the art at the time the invention was made to fabricate a grating within the ring fiber

laser taught in the Stepanov patent using the mask taught in the Starodubov patent because the mask has a circumferential pattern which would allow forming a grating within a curved fiber laser and the formed grating would allow the fiber laser to operate in a single longitudinal mode. The Applicants respectfully disagree with the conclusions
5 drawn by the Examiner.

As noted by the MPEP 2143, “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings.
10 Second, there must be a reasonable expectation of success. Finally, the prior art references (or references when combined) must teach or suggest all the claim limitations. The teachings or suggestion to make the claimed combination and the reasonable expectation of success must be both found in the prior art, and not based on applicant’s disclosure.

15 The Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness with respect to the combination of the inventions of Starodubov, Stepanov, and D’Amato et al.

Claim 1 claims “A method for generating single polarization output from a fiber laser comprising the steps of using a non-destructive technique to fabricate a Bragg
20 grating within the fiber laser and forming the fiber laser at the grating position into a tight curve.”

The first criteria for establishing a *prima facie* case of obviousness is a suggestion or motivation to combine the references found either in themselves or in the knowledge generally available to one of ordinary skill in the art. The Examiner gave the motivation
25 to combine the Starodubov patent with the Stepanov patent as being within the knowledge of one of ordinary skill in the art because the mask has a circumferential pattern which would allow forming a grating within a curved fiber. However, the Examiner has not indicated why one skilled in the art would form the grating of the Stepanov patent by the method of the Starodubov patent. The grating in the Stepanov
30 patent is fairly small with respect to the entire loop. The Applicants are unaware of what problem would be solved or what reason one skilled in the art would have to use the

mask of the Starodubov patent to form the grating in the Stepanov patent. What would provide the motivation to one skilled in the art to make this modification? The Starodubov patent indicates that one reason for using the mask disclosed is to prevent stitching errors in gratings when the gratings have to be considerable distance. This problem is not found in the Stepanov patent because the grating required is very short. Thus, the Applicants submit that there is no motivation found either in the Stepanov patent, the Starodubov patent, or in the knowledge generally available to one of ordinary skill in the art to combine these two references.

In light of the foregoing, the Applicants submit the Examiner has not established a *prima facie* case of obviousness with respect to the combination of the inventions of Starodubov, Stepanov, and D'Amato et al. Thus, the Applicants submit that Claim 1 contains patentable subject matter and should be allowed. As such, the Applicants further submit that Claims 2-8 are also patentable at least through their dependence upon an allowable base claim.

Claim 9

The same arguments presented above in favor of the patentability of Claim 1 can also be applied to Claim 9. As such, the Applicants submit that Claim 9 is also patentable over the cited prior art. Therefore, the Applicants submit that Claim 9 contains patentable subject matter and should be allowed. As such, the Applicants further submit that Claims 9-16 are also patentable at least through their dependence upon an allowable base claim.

Claim 17

The Applicants submit that even if the Starodubov patent is considered prior art, the claims currently pending in the application are patentable over the art cited thus far by the Examiner.

On page 3 of the Office Action, the Examiner specifically rejected Claim 17, by combining the Starodubov patent with the Stepanov patent as discussed above. For the same reasons given above, the Applicants submits that there is no motivation to combine these two references. Further, the Examiner combines the Fermann patent stating that it

teaches that tightly coiling a fiber will induce a loss, which will provide a single polarization. The Applicants submit that there is no reasonable expectation of success when the Fermann patent is combined with the Starodubov patent and the Stepanov patent.

5 The abstract of the Fermann patent teaches that polarization-dependent loss can be introduced by tightly coiling the highly-bifringent fiber, which generates a higher loss along the fast axis. Thus, one skilled in the art would understand that you would need a tightly coiled, highly-bifringent fiber in order to control the polarization. However, in neither the Starodubov patent or the Stepanov patent does it mention a highly-bifringent
10 fiber. The Examiner suggests that it would have been obvious to a person having ordinary skill in the art to tightly coil the laser fiber loop of the Stepanov patent as suggested by the Fermann patent because it would provide a single polarization beam. However, the Stepanov patent teaches, in col. 3, lines 19-24, that the ring cavity provides additional feedback to the lasing signal of the DFB structure, and this feedback decreases
15 the lasing threshold compared to the traditional DFB laser. Thus, if one were to tightly coil the laser fiber loop of the Stepanov patent as suggested by the Fermann patent, the DFB structure would no longer work as outlined in the Stepanov patent. MPEP 2143.02 states, "if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the
20 references are not sufficient to render the claims *prima facie* obvious." Thus, the Applicants submit that the combination of the art cited by the Examiner does not establish a *prima facie* case of obviousness. Therefore, the Applicants submit that Claim 17 is patentable over the cited prior art.

As stated above, the Applicants submit that Claim 17 contains patentable subject
25 matter and should be allowed. Further, the Applicants submit that Claims 18-24 are also patentable at least through their dependence upon an allowable base claim.

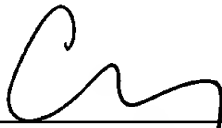
Concluding Remarks:

In view of the foregoing, it is respectfully submitted that all now pending claims 1-24 are in allowable condition. In light of the forgoing, reconsideration is respectfully requested. Should the Examiner have any questions regarding this response or need any additional information, please contact the undersigned at (310) 589-8158.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 50-2691. In particular, if this response is not timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 50-2691.

Respectfully submitted,

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